

BEETLES FROM PITFALL-TRAPPING AT HIGH ALTITUDE IN THE SCOTTISH HIGHLANDS

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THIS PAPER records beetles taken from traps operated in a range of montane habitats at three widely separated sites in the eastern, central and north-western Highlands. Some hand-collected species are also included. Similar studies are the recent work by Owen and Thaxton (1994) detailing captures from high altitude in the Cairngorms while Greenslade (1968) examined Carabids at a range of altitudes on two hills in Argyll.

The trapping was carried out: (1) on Meall a' Chrasgaidh, a summit in the Fannich Hills range (West Ross), (2) on the high-altitude plateau of Creag Meagaidh in the central Highlands (Inverness-shire) and (3) in Lurcher's Gully, a north-facing stream gully on the Cairngorms (Inverness-shire). The traps were pitfalls consisting of white plastic drinking cups, 9.5cm tall and 6.7cm in diameter with drain holes 3cm below the rim. The pitfalls were sunk in the ground with their rims flush with the ground surface, set 2m apart and filled up to the drain holes with 4% formalin solution to which were added a few drops of detergent. The latter facilitates capture by lowering the surface tension of the trapping fluid. The whole of the trapping covered the period from the end of May to the beginning of October, though the duration of trapping at any one site ranged from only 25 to 57 days.

The traps were operated in a range of representative montane habitats. On both Meall a' Chrasgaidh and Creag Meagaidh traps were operated in tufted-hair grass *Deschampsia cespitosa* grassland, mat-grass *Nardus stricta* grassland and woolly fringe-moss *Racomitrium lanuginosum* heath, which grows with three-leaved rush *Juncus trifidus* on Creag Meagaidh. On Creag Meagaidh traps were also operated in lichen-rich bilberry *Vaccinium myrtillus* heath. Two sets of traps were in operation on Creag Meagaidh in 1985, in mat-grass grassland and woolly-fringe moss heath at the same places as in 1983. In Lurcher's Gully the traps were operated in blanket bog with heather *Calluna vulgaris* and cotton-grasses *Eriophorum* spp., wet heath with heather and deer-grass *Trichophorum cespitosum*, tall heather heath, prostrate heather heath, mat-grass grassland, lichen-bilberry heath crowberry *Empetrum nigrum* heath with woolly fringe-moss, and a mossy spring. Six pitfalls were operated in each habitat. Table 1 provides further details of the trapping which was supplemented by short sessions of hand-collecting.

The numbers of each of the 112 species trapped and the percentage of the total are given in Table 1. The list is dominated by Carabids and Staphylinids with 26 and 57 species respectively. No other family has more

than five species. The catch on Creag Meagaidh in 1985 is much lower in species compared with 1983 which may be due to trapping at two instead of four trap sites, and possibly also to poor weather during the trapping period.

The results are presented more for the overall picture of the montane beetle fauna than for comparisons between sites. The latter are difficult to make because of differences in the range of habitat trapped, numbers of specimens caught and the length and dates of trapping. Half the species (56) were trapped on at least two of the sites, if the two lists from Creag Meagaidh are treated as one. These include most of the more frequently taken species. Many fewer species were taken on Meall a'Chrasgaidh and on Creag Meagaidh in 1985 than at the other two sites. The majority of the species taken on Meall a'Chrasgaidh and on Creag Meagaidh in 1985 were also taken at the other sites and the main difference between the species-poor and the species-rich catches was in the absence of species.

This study complements that of Owen and Thaxton (1994) by presenting the results of trapping at a series of trap sites in montane ground at lower altitudes than in their study. A wider range of species was taken (112 species as against 25 species) which is perhaps attributable to the less severe climatic conditions at the lower altitudes and wider range of habitats trapped overall. All the species taken by Owen and Thaxton (1994), with the exception of *Nebria nivalis* (Paykull) and *Corticaria linearis* (Paykull), were taken in traps in this study. Chiefly, the additional species taken in this study are eurytopic species that are found generally over a wide range of altitudes, though an additional eight montane species were also taken, to give 21 in total (Table 1).

Greenslade (1968) recorded only three species of Carabid (*Carabus problematicus*, *Nebria gyllenhali* and *Patrobus assimilis*) by hand-searching above 760m on Ben Cruachan and Beinn Eunaich. This compares with 26 species of Carabids taken above an altitude of 790m in this study.

Two of the species caught in traps, *Amara alpina* and *Stenus glacialis*, are listed as Red Data Book species (Hyman and Parsons 1992, 1994). Specimens of *A. alpina* were taken at six out of the nine trap sites in Lurcher's Gully. The numbers, given in brackets, taken at each trap site with the altitude of the site were: blanket mire at 575m (12), wet heath at 650m (26), tall heather heath at 740m (2), mat-grass grassland at 830m (4), prostrate heather heath at 885m (1) and mat-grass grassland at 980m (4). Adults were seen feeding on the seed heads of deer-grass between the two lower trap sites when the catch was emptied. Two specimens of *A. alpina* were taken by hand-searching in the Cairngorms in Gleann Einrich at an altitude of around 600m (grid ref. NH 9302) in wet heath with heather and deer-grass on 15 July 1986. On Creag Meagaidh *A. alpina* was only taken at the highest trap site at an altitude of 1000m in woolly fringe-moss heath.

Table 1. Site data and numbers of beetles trapped in each area and percentage of the area totals.

| | | |
|-----------------------------------|--------------------------------------|---|
| Name of hill or range | Fannich Hills Meall a'Chrasgaidh | Creag Meagaidh (1) An Cearcallach |
| O.S. grid refs. | NH1873 | NN4185, NN4286, NN4386 |
| Altitude (m) of trap sites | 853, 883, 900 | 790, 885, 975, 1000 |
| Dates of trapping | 7.vi. – 11.vii.1982 | 16.v. – 10.vii.1983 |
| No. of trap days | 792 | 1344 |
| Number of beetles trapped | 3587 | 2631 |
| Number of species trapped | 32 | 88 |
| Name of hill or range | Creag Meagaidh (2) An Cearcallach | Cairngorms Lurcher's Gully |
| O.S. grid refs. | NN4286, NN4386 | NH9703, NH9704, NH9705 |
| Altitude (m) of trap sites | 975, 1000 | 575, 650, 740, 830, 885, 920, 975, 980 |
| Dates of trapping | 13.viii – 8.x.1985 | 28.v. – 21.vi.1988 |
| No. of trap days | 672 | 1200 |
| Number of beetles trapped | 317 | 1609 |
| Number of species trapped | 31 | 60 |

| Family/species | Status* | Fannich Hills | | Creag Meagaidh (1) 1983 | | Creag Meagaidh (2) 1985 | | Cairngorms (Lurcher's Gully) | |
|--|---------|---------------|-----|-------------------------|------|-------------------------|------|------------------------------|------|
| | | No. trapped | % | No. trapped | % | No. trapped | % | No. trapped | % |
| Carabidae | | | | | | | | | |
| <i>Cychrus [carabiodes (L.)]</i> | E | – | – | 4 | 0.2 | – | – | 1 | 0.1 |
| <i>s. rostratus (L.)</i> | | | | | | | | | |
| <i>Carabus [glabratus Paykull]</i> | M | – | – | 15 | 0.6 | – | – | – | – |
| <i>s. lapponicus Born</i> | | | | | | | | | |
| <i>C. [problematicus Herbst]</i> | E | 80 | 2.2 | 189 | 7.2 | 29 | 9.1 | 126 | 7.8 |
| <i>s. gallicus Gehin</i> | | | | | | | | | |
| <i>C. [violaceus L.]</i> | E | – | – | 11 | 0.4 | – | – | – | – |
| <i>v. sollicitans Hartert britannicus Born</i> | | | | | | | | | |
| <i>Nebria gyllenhalii (Schoenherr)</i> | M | 85 | 2.4 | 203 | 7.7 | 24 | 7.6 | 42 | 2.6 |
| <i>N. salina Fairmaire & Laboulbène</i> | E | – | – | – | – | 1 | 0.3 | – | – |
| <i>Notiophilous aquaticus (L.)</i> | E | – | – | – | – | – | – | 4 | 0.2 |
| <i>N. biguttatus (Fabr.)</i> | E | – | – | 12 | 0.5 | – | – | 6 | 0.4 |
| <i>N. geminyi Fauvel</i> | E | 8 | 0.2 | 16 | 0.6 | 2 | 0.6 | 29 | 1.8 |
| <i>Elaphrus cupreus Duftschmid</i> | E | – | – | – | – | – | – | 3 | 0.2 |
| <i>Loricera pilicornis (Fabr.)</i> | E | – | – | 6 | 0.2 | – | – | 35 | 2.2 |
| <i>Miscodera arctica (Paykull)</i> | E | – | – | 6 | 0.2 | 7 | 2.2 | 1 | 0.1 |
| <i>Patrobus assimilis Chaudoir</i> | M | 83 | 2.3 | 175 | 6.7 | 13 | 4.1 | 146 | 9.1 |
| <i>P. septentrionis (Dejean)</i> | M | – | – | 22 | 0.8 | – | – | 228 | 14.2 |
| <i>Trechus obtusus Erichson</i> | E | 3 | 0.1 | – | – | – | – | 34 | 2.1 |
| <i>Pterostichus adstrictus Eschscholtz</i> | E | – | – | 5 | 0.2 | 1 | 0.3 | – | – |
| <i>P. diligens (Sturm)</i> | E | – | – | 2 | 0.1 | – | – | 1 | 0.1 |
| <i>P. nigrita (Paykull)</i> | E | – | – | 1 | <0.1 | – | – | 3 | 0.2 |
| <i>Calathus melanocephalus (L.)</i> | E | – | – | 59 | 2.2 | 63 | 19.9 | 179 | 11.1 |
| <i>Amara aenea (Degeer)</i> | E | – | – | – | – | 1 | 0.3 | – | – |
| <i>A. alpina (Paykull)</i> | M | – | – | – | – | 4 | 1.3 | 49 | 3.0 |
| <i>A. lunicollis Schiödte</i> | E | – | – | 3 | 0.1 | – | – | 1 | 0.1 |
| <i>Harpalus latus (L.)</i> | E | – | – | 6 | 0.2 | – | – | – | – |

| | | | | | | | | | |
|--|---|-----|------|----|------|----|------|-----|------|
| <i>Trichocellus cognatus</i> (Gyllenhal) | E | — | — | 4 | 0.2 | — | — | 3 | 0.2 |
| <i>Bradycellus ruficollis</i> (Stephens) | E | — | — | 1 | <0.1 | — | — | 4 | 0.2 |
| <i>Cymindis vaporariorum</i> (L.) | M | — | — | — | — | — | — | 5 | 0.3 |
| Hydrophilidae | | | | | | | | | |
| <i>Cercyon atomarius</i> (Fabr.) | E | — | — | 1 | <0.1 | — | — | — | — |
| <i>Megasternum obscurum</i> (Marsham) | E | — | — | 4 | 0.2 | — | — | 1 | 0.1 |
| Leiodidae | | | | | | | | | |
| <i>Agathidium seminulum</i> (L.) | E | — | — | — | — | — | — | 1 | 0.1 |
| <i>Choleva agilis</i> (Illiger) | E | — | — | 1 | <0.1 | — | — | 3 | 0.2 |
| <i>C. glauca</i> Britten | E | — | — | 3 | 0.1 | — | — | — | — |
| Staphylinidae | | | | | | | | | |
| <i>Anthobium unicolor</i> (Marsham) | E | — | — | 2 | 0.1 | — | — | 5 | 0.3 |
| <i>Olophrum piceum</i> (Gyllenhal) | E | — | — | 4 | 0.2 | 1 | 0.3 | 1 | 0.1 |
| <i>Arpedium brachypterum</i> (Gravenhorst) | M | 519 | 14.5 | 18 | 0.7 | 4 | 1.3 | 56 | 3.5 |
| <i>Acidota crenata</i> (Fabr.) | E | — | — | 3 | 0.1 | 11 | 3.5 | — | — |
| <i>Lesteva monticola</i> Kies. | M | 306 | 8.5 | 4 | 0.2 | — | — | 5 | 0.3 |
| <i>Geodromicus longipes</i> (Mannerheim) | M | — | — | 29 | 1.1 | 39 | 12.3 | — | — |
| <i>Anthophagus alpinus</i> (Paykull) | M | 19 | 0.5 | 10 | 0.4 | 2 | 0.6 | 9 | 0.6 |
| <i>Eusphalerum minutum</i> (Fabr.) | E | — | — | 2 | 0.1 | — | — | 1 | 0.1 |
| <i>Eudectus whitei</i> Sharp | M | 1 | <0.1 | 4 | 0.2 | — | — | — | — |
| <i>Syntomium aeneum</i> (Müller, P.W.J.) | E | — | — | — | — | — | — | 2 | 0.1 |
| <i>Anotylus rugosus</i> (Fabr.) | E | — | — | — | — | — | — | 1 | 0.1 |
| <i>Oxytelus laqueatus</i> (Marsham) | E | 1 | <0.1 | 3 | 0.1 | — | — | — | — |
| <i>Stenus brevipennis</i> Thompson, C.G. | E | — | — | 2 | 0.1 | — | — | 2 | 0.1 |
| <i>S. brunnipes</i> Stephens | E | — | — | 7 | 0.3 | — | — | — | — |
| <i>S. geniculatus</i> Grav. | E | 1 | <0.1 | — | — | — | — | — | — |
| <i>S. glacialis</i> Heer | M | 1 | <0.1 | — | — | 1 | 0.3 | — | — |
| <i>S. impressus</i> Germar | E | — | — | 1 | <0.1 | — | — | 3 | 0.2 |
| <i>Lathrobium brunnipes</i> (Fabr.) | E | — | — | — | — | — | — | 2 | 0.1 |
| <i>L. fulvipenne</i> (Grav.) | E | — | — | 4 | 0.2 | — | — | — | — |
| <i>Othius angustus</i> Stephens | E | 2 | 0.1 | 16 | 0.6 | 1 | 0.3 | 8 | 0.5 |
| <i>O. punctulatus</i> (Goeze) | E | — | — | 1 | <0.1 | — | — | — | — |
| <i>Philonthus laminatus</i> (Creutzer) | E | — | — | 1 | <0.1 | — | — | — | — |
| <i>Quedius boopoides</i> Munster | E | 2 | 0.1 | 4 | 0.2 | 6 | 1.9 | 13 | 0.8 |
| <i>Q. boops</i> (Grav.) | E | — | — | 4 | 0.2 | — | — | — | — |
| <i>Q. fulvicollis</i> (Stephens) | E | — | — | 5 | 0.2 | — | — | 2 | 0.1 |
| <i>Q. molochinus</i> (Gravenhorst) | E | 55 | 1.5 | 68 | 2.6 | 5 | 1.6 | 193 | 12.0 |
| <i>Q. nitipennis</i> (Stephens) | E | — | — | 8 | 0.3 | — | — | — | — |
| <i>Q. schatzmayri</i> Gridelli | E | — | — | 1 | <0.1 | — | — | — | — |
| <i>Q. umbrinus</i> Erichson | E | 1 | <0.1 | — | — | — | — | — | — |
| <i>Mycetoporus angularis</i> Mulsant & Rey | E | 4 | 0.1 | 13 | 0.5 | — | — | — | — |
| <i>M. baudueri</i> Mulsant & Rey | E | 3 | 0.1 | 68 | 2.6 | 20 | 6.3 | 3 | 0.2 |
| <i>M. clavicornis</i> (Stephens) | E | — | — | — | — | — | — | 1 | 0.1 |
| <i>M. lepidus</i> (Grav.) | E | 1 | <0.1 | 9 | 0.3 | — | — | — | — |
| <i>M. rufescens</i> (Stephens) | E | — | — | 2 | 0.1 | — | — | 1 | 0.1 |
| <i>Bryoporus rugipennis</i> Pandellé | M | 3 | 0.1 | 2 | 0.1 | — | — | — | — |
| <i>Bolitobius inclinans</i> (Grav.) | E | — | — | — | — | — | — | 1 | 0.1 |
| <i>Tachyporus chrysomelinus</i> (L.) | E | — | — | 7 | 0.3 | — | — | — | — |
| <i>Tachinus elongatus</i> Gyllenhal | E | — | — | 3 | 0.1 | — | — | 23 | 1.4 |
| <i>T. marginellus</i> (L.) | E | — | — | 1 | <0.1 | — | — | — | — |
| <i>T. proximus</i> Kraatz | E | — | — | 5 | 0.2 | — | — | — | — |
| <i>T. signatus</i> Grav. | E | 4 | 0.1 | — | — | — | — | — | — |
| <i>Boreophilia islandica</i> (Kraatz) | M | — | — | 1 | <0.1 | — | — | 4 | 0.2 |
| <i>Aloconota gregaria</i> (Erichson) | E | — | — | — | — | — | — | 2 | 0.1 |
| <i>Alaobia scapularis</i> (Sahlberg, C.R.) | E | — | — | — | — | 1 | 0.3 | — | — |
| <i>Geostiba circellaris</i> (Grav.) | E | — | — | — | — | 2 | 0.6 | 1 | 0.1 |
| <i>Liogluta nitidiuscula</i> (Sharp) | M | 7 | 0.2 | 3 | 0.1 | 11 | 3.5 | — | — |

| | | | | | | | | | |
|---|---|-------------|------|-------------|------|------------|-----|-------------|------|
| <i>Atheta arctica</i> (Thomson, C.G.) | M | 1 | <0.1 | 10 | 0.4 | — | — | 28 | 1.7 |
| <i>A. tibialis</i> (Heer) | M | 2349 | 65.5 | 546 | 20.8 | 21 | 6.6 | 191 | 11.9 |
| <i>A. celata</i> (Erichson) | E | — | — | 1 | <0.1 | — | — | — | — |
| <i>A. brunneipennis</i> (Thomson, C.G.) | E | — | — | 5 | 0.2 | — | — | — | — |
| <i>Mniusa incrassata</i> (Mulsant & Rey) | E | — | — | 40 | 1.5 | — | — | 20 | 1.2 |
| <i>Oxypoda elongatula</i> Aubé | E | — | — | 4 | 0.2 | — | — | — | — |
| <i>O. nigricornis</i> Motschulsky | E | — | — | — | — | — | — | 1 | 0.1 |
| <i>O. procerula</i> (Mannerheim) | E | — | — | 1 | <0.1 | — | — | 2 | 0.1 |
| <i>O. tirolensis</i> Gredler | M | 1 | <0.1 | 35 | 1.3 | — | — | 13 | 0.8 |
| <i>Aleochara bipustulata</i> (L.) | E | — | — | 1 | <0.1 | — | — | — | — |
| <i>A. lanuginosa</i> Grav. | E | — | — | — | — | — | — | 1 | 0.1 |
| Pselaphidae | | | | | | | | | |
| <i>Bythinus burrelli</i> (Denny) | E | — | — | 2 | 0.1 | — | — | — | — |
| Geotrupidae | | | | | | | | | |
| <i>Geotrupes stercorarius</i> (L.) | E | — | — | 5 | 0.2 | — | — | — | — |
| Scarabaeidae | | | | | | | | | |
| <i>Aphodius borealis</i> Gyllenhal | E | — | — | 1 | <0.1 | — | — | — | — |
| <i>A. depressus</i> (Kugelann) | E | — | — | 69 | 2.6 | — | — | — | — |
| <i>A. lapponum</i> Gyllenhal | M | — | — | 49 | 1.9 | — | — | — | — |
| Byrrhidae | | | | | | | | | |
| <i>Simplocaria semistriata</i> (Fabr.) | E | — | — | 1 | <0.1 | — | — | — | — |
| <i>Byrrhus arietinus</i> (Fabr.) | E | — | — | 2 | 0.1 | — | — | 2 | 0.1 |
| <i>B. fasciatus</i> (Forster) | E | 3 | 0.1 | 62 | 2.4 | 3 | 0.9 | 10 | 0.6 |
| <i>B. pilula</i> (L.) | E | 3 | 0.1 | 76 | 2.9 | 1 | 0.3 | 30 | 1.9 |
| Elateridae | | | | | | | | | |
| <i>Hypnoidus riparius</i> (Fabr.) | E | 29 | 0.8 | 162 | 6.2 | 9 | 2.8 | — | — |
| <i>Ctenicera cuprea</i> (Fabr.) | E | — | — | 46 | 1.8 | — | — | 2 | 0.1 |
| Cantharidae | | | | | | | | | |
| <i>Rhagonycha femoralis</i> (Brullé) | E | — | — | 3 | 0.1 | — | — | — | — |
| <i>Malthodes pumilus</i> (Brébisson) | E | — | — | 1 | <0.1 | — | — | — | — |
| Nitidulidae | | | | | | | | | |
| <i>Meligethes aeneus</i> (Fabr.) | E | — | — | — | — | — | — | 2 | 0.1 |
| Rhizophagidae | | | | | | | | | |
| <i>Rhizophagus dispar</i> (Paykull) | L | — | — | 1 | <0.1 | — | — | — | — |
| <i>Monotoma longicollis</i> Gyllenhal | E | 1 | <0.1 | — | — | — | — | — | — |
| Cryptophagidae | | | | | | | | | |
| <i>Antherophagus pallens</i> (L.) | E | — | — | — | — | 1 | 0.3 | — | — |
| Chrysomelidae | | | | | | | | | |
| <i>Chrysolina staphylaea</i> (L.) | E | — | — | 1 | <0.1 | — | — | — | — |
| Apionidae | | | | | | | | | |
| <i>Apion cruentatum</i> Walton, J. | E | — | — | 8 | 0.3 | — | — | — | — |
| Curculionidae | | | | | | | | | |
| <i>Otiorynchus arcticus</i> (Fabricius, O.) | M | 2 | 0.1 | 265 | 10.1 | 26 | 8.2 | 54 | 3.4 |
| <i>O. nodosus</i> (Müller, O.F.) | M | 6 | 0.2 | 12 | 4.3 | 6 | 1.9 | 9 | 0.6 |
| <i>Hylobius abietis</i> (L.) | L | — | — | 1 | <0.1 | — | — | — | — |
| <i>Notaris acridulus</i> (L.) | E | 3 | 0.1 | 51 | 1.9 | 1 | 0.3 | — | — |
| <i>Micrelus ericae</i> (Gyllenhal) | L | — | — | 6 | 0.2 | — | — | — | — |
| Total numbers caught | | 3587 | | 2631 | | 317 | | 1609 | |

Status codes: E = eurytopic species; L = lowland species; M = montane species.

Owen and Thaxton (1994) trapped a single specimen of *A. alpina* at an altitude of 980m. They also give details of earlier records. The collections of the Royal Scottish Museum (RSM) and the Scottish Insects Record Index (SIRI) show that the species is known from four areas, discounting the suspect record from Rona by Harrison (1935). These are Rannoch (Meall Garbh), Aviemore (Cairn Gorm), Braemar and Blair Atholl. None of these records give any precise details of capture. One published record (Evans 1899), not listed in SIRI, is from an altitude of 1700 ft. (520m) on a hill a few miles up Glen Tilt near Blair Atholl. The two specimens on which the record is based are in the RSM, and the Blair Atholl specimens assumed by Owen and Thaxton (1994) to have been taken from high altitude are presumably the same. The captures in Lurcher's Gully in this study, coupled with previous records, show that *A. alpina* has a wide altitudinal range from around as low as 500-600m up to about 1000m. The data from Lurcher's Gully also indicate that the species is more frequent at low altitude, at least on the northern slopes of the Cairngorms. Further, the species was taken in largest numbers in blanket mire and wet heath with abundant deer-grass, on which the adult was observed to feed. Deer-grass also occurs, but less abundantly, among the mat-grass at altitudes of 830m and 980m where the species was taken in small numbers. At the capture sites at high altitude on Creag Meagaidh and on A'Choinneach (Owen and Thaxton 1994), where deer-grass is absent, three-leaved rush may provide an alternative food source for adults.

The record of *A. alpina* from Creag Meagaidh extends the known range to West Inverness-shire.

The captures of *S. glacialis* on both Meall a'Chrasgaidh and Creag Meagaidh were in woolly fringe-moss heath at altitudes of 900m and 1000m respectively. This species is known from only five vice-counties according to Hyman and Parsons (1994), but records are widely distributed from North Thumberland to Fife and the Highlands.

Two other montane species were taken by hand-collecting on the Fannich Hills. A single specimen of *N. nivalis* was taken on a rocky slope below the summit of Sgurr Mor (grid ref. NH 205716), at an altitude of 950m on 25 June 1987. On the same day four males of *Phyllodecta polaris* Schneider were taken on the summit of Sgurr Mor (grid ref. NH 203716) at an altitude of 1050m. They were taken in woolly fringe-moss heath with an abundance of small herbs such as alpine bistort *Polygonum viviparum*, and least willow *Salix herbacea*. The latter is known to be the foodplant of *P. polaris* (Owen, 1988a). Graham Dalby gave me a single male *P. polaris* taken the following day on the neighbouring summit of Sgurr nan Clach Gaela (grid ref. NH 188719), at an altitude of 920m. An examination of the capture site showed that the vegetation was similar to that on Sgurr Mor.

N. nivalis was formerly regarded as a rare species from high altitude but is now known from 13 vice-counties in the eastern, northern and western

Highlands, Ebudes, Shetland, England and Wales (Hyman and Parsons 1992). *P. polaris* was first reported in Britain by Morris (1970), and was first found on Sgurr Mor by Owen (1983). The species is currently known from four vice-counties, all in the Highlands (Hyman & Parsons 1992).

Another species, *Eudectus whitei*, was formerly thought to be rare but is now known from about 20 sites in Scotland and northern England (Owen, 1988b; Owen and Thaxton, 1994). The species was captured on Meall a'Chrasgaidh in woolly fringe-moss heath at an altitude of 883m. On Creag Meagaidh the species was caught in tufted-hair grass grassland, bilberry-lichen heath and woolly fringe-moss heath. *E. whitei* was also caught on Creag Meagaidh in 1985, though lower down the trap transect than reported in this paper, at an altitude of only 620m, in bilberry heath.

Three of the species caught on Creag Meagaidh (*Rhizophagus dispar*, *Hylobius abietis* and *Macrelus ericae*) are lowland species out of place at high altitude. *R. dispar* is found under bark and on bark fungus (Peacock, 1977). *H. abietis* feeds on *Pinus* and *Picea* spp. and *M. ericae* feeds on *Calluna vulgaris* and *Erica* spp. (Bullock, 1992). Birch, pine and spruce woods grow on the lower slopes two to three kilometres from the trap sites. *C. vulgaris* mixed with *Erica* spp. is frequent on the lower slopes below the traps sites, up to an altitude of about 600m.

In conclusion this study shows that there is a richer beetle fauna on montane ground at 575-1000m altitude compared with that known from very high altitude at 980-1300m (Owen and Thaxton, 1994). This study confirms the latter study in showing that a large part of the fauna (79%, Table 1) is made up of widely distributed eurytopic species.

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Channel Islands fauna is not “British”

I would emphatically support Clive Simpson's contention in his note under this heading (*Ent. Rec.* **108**: 210), in which he sets out the case with unerring cogency. There is simply no escaping the fact that the Britannic area is a geographic and faunistic unity and that the Channel Islands are not part of it – however much this may offend patriotic susceptibilities in some quarters. Devotees of other orders than Lepidoptera are not entirely free of fallacy, but at least coleopterists have never, I think, been seriously tempted in that direction. Geography and politics are two different things and should not be confused: the one is natural and for practical purposes stable, the other artificial and liable to change. Suppose, for argument's sake, that Scotland were to secede from the UK in the near future – unlikely perhaps but not unthinkable. Would the “Channel Island moths are British” faction then act logically and reduce the “British List” accordingly? I doubt it.— A.A. ALLEN, 49 Montcalm Road, Charlton, London SE7 8QG.

A record of *Hipparchia semele* (L.) (Lep.: Satyrinae) for Grassholm Island, Wales

Hipparchia semele was observed on Grassholm Island (grid reference SR51) on 22.vii.1996 by Mr Graham Thompson, warden of Skokholm, who has kindly passed the record on to me. This raises the number of species observed on the island to six, the other being: *Pieris brassicae*, *P. rapae**, *Vanessa atalanta**, *Cynthia cardui* and *Aglais urticae**. Three of the records, marked with an asterisk, predate 1960. *C. cardui* has been recorded in 1996, on 26.vi. by Ian Bullock (from RSPB) at St. Davids amid the substantial migration of this butterfly throughout Britain. Unfortunately the record of *H. semele* has arrived too late to be entered into *The butterflies of British and Irish offshore islands* (Gem Publishing Company, Wallingford, Oxon) to be published shortly.— R.L.H. DENNIS, 4 Fairfax Drive, Wilmslow, Cheshire SK9 6EY.